We claim:

1. A method of making a polymer electrolyte membrane comprising the steps of:

a) providing a mixture of a polymer comprising a fluorinated backbone and first pendant groups, wherein said first pendant groups comprise groups selected from sulfonyl halide and sulfonate groups, and a bisamidine compound;

b) forming said mixture into a membrane; and

c) reacting the amidine groups of said bisamidine compound to form triazine groups.

2. The method according to claim 1 additionally comprising, after step c), the step of :

d) converting said groups selected from sulfonyl halide and sulfonate groups to sulfonic acid groups.

3. The method according to claim 1 wherein said first pendant groups are according to the formula: $-R^1-SO_2X$, where X is $-O^-A^+$, where A^+ is an organic or inorganic cation, and where R^1 is a branched or unbranched perfluoroalkyl or perfluoroether group comprising 1-15 carbon atoms and 0-4 oxygen atoms.

4. The method according to claim 3 wherein A^+ is ammonium ion.

5. The method according to claim 1 wherein said first pendant groups are according to the formula: $-R^1-SO_2X$, where X is a halogen and where R^1 is a branched or unbranched perfluoroalkyl or perfluoroether group comprising 1-15 carbon atoms and 0-4 oxygen atoms.

6. The method according to claim 5 wherein X is F.

7. The method according to claim 1 wherein said first pendant groups are according to the formula: $-O-CF_2-CF_2-CF_2-CF_2-SO_2F$.

8. The method according to claim 1 wherein said first pendant groups are according to the formula: $-O-CF_2-CF(CF_3)-O-CF_2-CF_2-SO_2F$.

9. The method according to claim 1 wherein said bisamidine compounds are selected from compounds according to the formula:

$$H_2N(HN=)C-R^{11}-C(=NH)NH_2 \qquad (I)$$

where R^{11} is a divalent, branched or unbranched, partially or fully fluorinated, alkyl or ether group comprising 1-15 carbon atoms and 0-4 oxygen atoms.

10. The method according to claim 1 wherein said bisamidine compounds are selected from compounds according to the formula:

$$H_2N(HN=)C-R^{11}-C(=NH)NH_2 \qquad (I)$$

where R^{11} is a divalent, perfluorinated alkyl group comprising 2-8 carbon atoms.

11. The method according to claim 1 wherein said bisamidine compounds are according to the formula: $H_2N(HN=)C-C_4F_8-C(=NH)NH_2$.

12. The method according to claim 3 wherein said bisamidine compounds are selected from compounds according to the formula:

$$H_2N(HN=)C-R^{11}-C(=NH)NH_2 \qquad (I)$$

where R^{11} is a divalent, branched or unbranched, partially or fully fluorinated, alkyl or ether group comprising 1-15 carbon atoms and 0-4 oxygen atoms.

13. The method according to claim 3 wherein said bisamidine compounds are selected from compounds according to the formula:

$$H_2N(HN=)C-R^{11}-C(=NH)NH_2 \qquad (I)$$

where R^{11} is a divalent, perfluorinated alkyl group comprising 2-8 carbon atoms.

14. The method according to claim 3 wherein said bisamidine compounds are according to the formula: $H_2N(HN=)C\text{-}C_4F_8\text{-}C(=NH)NH_2$.

15. The method according to claim 5 wherein said bisamidine compounds are selected from compounds according to the formula:

$$H_2N(HN=)C\text{-}R^{11}\text{-}C(=NH)NH_2 \qquad (I)$$

where R^{11} is a divalent, branched or unbranched, partially or fully fluorinated, alkyl or ether group comprising 1-15 carbon atoms and 0-4 oxygen atoms.

16. The method according to claim 5 wherein said bisamidine compounds are selected from compounds according to the formula:

$$H_2N(HN=)C\text{-}R^{11}\text{-}C(=NH)NH_2 \qquad (I)$$

where R^{11} is a divalent, perfluorinated alkyl group comprising 2-8 carbon atoms.

17. The method according to claim 5 wherein said bisamidine compounds are according to the formula: $H_2N(HN=)C\text{-}C_4F_8\text{-}C(=NH)NH_2$.

18. The method according to claim 1 wherein step b) comprises imbibing said mixture into a porous supporting matrix.

19. The method according to claim 18 wherein said porous supporting matrix is a porous polytetrafluoroethylene web.

20. A polymer electrolyte membrane made according to the method of claim 1.

21. A polymer electrolyte membrane made according to the method of claim 2.

22. A polymer electrolyte membrane made according to the method of claim 3.

23. A polymer electrolyte membrane made according to the method of claim 4.

24. A polymer electrolyte membrane made according to the method of claim 5.

25. A polymer electrolyte membrane made according to the method of claim 6.

26. A polymer electrolyte membrane made according to the method of claim 7.

27. A polymer electrolyte membrane made according to the method of claim 8.

28. A polymer electrolyte membrane made according to the method of claim 9.

29. A polymer electrolyte membrane made according to the method of claim 10.

30. A polymer electrolyte membrane made according to the method of claim 11.

31. A polymer electrolyte membrane made according to the method of claim 12.

32. A polymer electrolyte membrane made according to the method of claim 13.

33. A polymer electrolyte membrane made according to the method of claim 14.

34. A polymer electrolyte membrane made according to the method of claim 15.

35. A polymer electrolyte membrane made according to the method of claim 16.

36. A polymer electrolyte membrane made according to the method of claim 17.

37. A polymer electrolyte membrane made according to the method of claim 18.

38. A polymer electrolyte membrane made according to the method of claim 19.

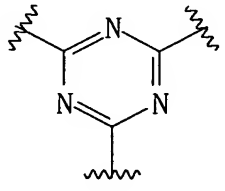
39. A polymer electrolyte membrane comprising an intimate mixture of:
a) a first polymer comprising a fluorinated backbone and first pendant groups which comprise sulfonic acid groups; and
b) a second polymer which is a fluorinated polytriazine.

40. The polymer electrolyte membrane according to claim 39 wherein said first pendant groups are according to the formula: $-R^1-SO_3H$, where R^1 is a branched or unbranched perfluoroalkyl or perfluoroether group comprising 1-15 carbon atoms and 0-4 oxygen atoms.

41. The polymer electrolyte membrane according to claim 39 wherein said first pendant groups are according to the formula: $-O-CF_2-CF_2-CF_2-CF_2-SO_3H$.

42. The polymer electrolyte membrane according to claim 39 wherein said first pendant groups are according to the formula: $-O-CF_2-CF(CF_3)-O-CF_2-CF_2-SO_3H$.

43. The polymer electrolyte membrane according to claim 39 wherein said second polymer comprises trivalent groups according to the formula:



(II)

said trivalent groups being linked by divalent groups $-R^{11}-$, where R^{11} is a branched or unbranched, partially or fully fluorinated, alkyl or ether group comprising 1-15 carbon atoms and 0-4 oxygen atoms.

44. The polymer electrolyte membrane according to claim 43 where R^{11} is a perfluorinated alkyl group comprising 2-8 carbon atoms.

45. The polymer electrolyte membrane according to claim 43 where R^{11} is $-C_4F_8-$.

46. The polymer electrolyte membrane according to claim 39 wherein said intimate mixture is embedded in a porous supporting matrix.

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47. The polymer electrolyte membrane according to claim 46 wherein said porous supporting matrix is a porous polytetrafluoroethylene web.